

**BULLETIN**  
**OF**  
**The Agricultural and Mechanical College**  
**of Texas**

(in cooperation with the United States Department of Agriculture)

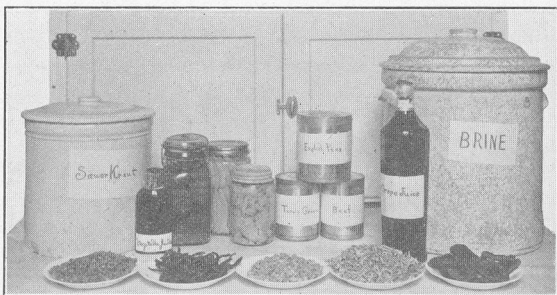
**JUNE 1, 1917**

**EXTENSION SERVICE**

**B-38**

**FOOD SAVING IN TEXAS**

**Drying, Brining, Canning,  
Curing**



**DRIED, BRINED, CANNED, CURED TEXAS FOODS.**

**Bottom row, left to right: Corn, Snap Beans, Okra, Shredded Carrot, Peaches.**

**Address**  
**CLARENCE OUSLEY**  
**Director of Extension Service, College Station, Texas.**

## FOREWORD

---

Tin cans are scarce and expensive and glass jars, now being used for products formerly put into tin, will probably be much higher in price before the summer is over. Housewives may improvise containers for some foods or they may resort to other methods of preserving fruits and vegetables.

It is the purpose of this bulletin to give simple suggestions and recipes for conserving foods, by drying, brining, bottling, curing, and canning, and by using certain local products as substitutes for foods which are scarce.

# FOOD SAVING IN TEXAS

By Miss Cornelia Simpson, Demonstrator in Home Economics, Extension Service, Agricultural and Mechanical College of Texas.

## HOME CONSERVATION OF FOODS

### Drying or Evaporating.

Before the advent of self sealing jars, many common foods were dried in the sun and air or near the fire. This method of preservation is merely reducing the moisture content. Moisture must be present for the growth of organisms which cause spoiling.

In damp climates and in cases where large quantities of foods are to be dried, artificial heat and drying frames or evaporators are employed. There are many types of evaporators on the market in commercial and home sizes. A few types are here shown.

Very successful evaporators can be made at home for use in the open air or on top of a cook stove. An efficient one consists of a square or oblong, upright frame covered with wire screening (top, bottom and sides) and fitted with movable shelves of wire netting. A sheet of glass placed on top of this frame, when used in the sun, intensifies the heat below. Turning the glass over frequently prevents dripping of moisture on the fruit or vegetables.

Sun dried fruits are darker than those artificially dried and sun dried green vegetables are less green; but, where fuel is expensive and the air is dry, sun drying is much more economical.

### Drying Vegetables.

Dehydrating or evaporating of many food products, is done by commercial plants for the army and navy and for arctic expeditions. Before the days of commercial and home canned vegetables, okra, green corn, pumpkins, "garden herbs" were dried for winter use. Farmers who have an excess of vegetables and few cans may save much valuable food by drying it while it is in the green state. The home evaporators will be found useful for this work.

### Dried Raw Okra and Shredded Vegetables.

Cut tender okra in about three-fourths inch cross sections and spread on boards to dry. Placing several pods parallel and using a long knife facilitates the work. Move about with the hand once or twice during drying. When apparently dry, put into thin cloth bags (flour sacks will do) and place in the open air frequently until late summer, when it may be closed up in tins or tight boxes.

Sweet potatoes, field pumpkins and carrots may be shredded and dried raw. Pumpkins and potatoes may be used for pies after being soaked for hours; the carrots will do for soups.

Any wholesome scraps of vegetables left from canning, pickling or drying (in uniform sizes) may be run through a course food chopper and dried quickly in a warm oven or evaporator. The evaporator

method retains the coloring matter in vegetables and fruits. Various combinations of vegetables suitable for soup may be ground together and dried.

Examples:

Onion	Onion	Cabbage	English peas
Okra	Parsley	Tomato	Celery
Celery top	Carrot	Onion	Carrot
	Green beans	Parsley	Red Pepper

A thrifty woman will catch the vegetable juices dripping from the food chopper and reduce them in a shallow enamel or earthen vessel for bottling as grape juice is put up. Salt, pepper, and suitable herbs may be added to this juice. Clean medicine bottles, new corks and sealing-wax can be used to bottle these juices.

Use these bottled vegetable "extracts" in hash, gravies, meat sauces or soups.

#### Dried Green Corn.

Everyone who has tried to can green corn in glass jars by the hot water process knows how difficult it is to keep in perfect condition. The nature of the vegetable and the bacterial life found on it make perfect sterilization tedious. The fact that secure sealing of glass jars is often not accomplished is responsible for spoiling, even after the corn has been well cooked in the jars.

There is a way to save green corn for winter use, which is commonly practiced in some sections of the United States and which is less expensive than canning. When properly prepared, dried green corn is a delicious winter dish.

**Receipe.** Plant some variety of corn suitable for table use. When well filled out, but not too hard, boil the corn on the cob, in water which is slightly salted, until the milk in the grain is thick. Do not have it too done. Drain off all water. Cut the corn from the cob and dry as quickly as possible in the hot sun or on board or papers near a hot stove. Better still, dry it quickly in a cook stove evaporator.

Since flies are so fond of green corn, a screened sunny porch is a good place to dry it. Iron roofing covered by wire screening and placed in the sun and wind makes a clean, hot drying pan for corn, okra and fruits. Naturally, the corn dried quickly near a hot stove or in the evaporator will be whiter than that dried more slowly by the outdoor method. When the evaporator is used, the corn can be dried without first boiling it.

When dry enough not to stick and mildew, put into thin cloth sacks and place in the sun every day. Keep flies away. It can be closed up in tin cans or paper sacks when the weather gets cool.

Dried vegetables, if soaked long enough to restore their freshness, may be cooked until tender and used as canned vegetables are used.

Dried green corn, okra or carrots, after being soaked and cooked, in same water in which they were soaked, may be mixed with a thick batter and fried as fritters.



### **Dried Pumpkins.**

Pie pumpkin may be pared, sliced and slightly cooked before drying like corn. Soak in milk over night and add sugar, eggs, and spices. Honey or perhaps molasses could take the place of sugar. If liked, a little corn starch or rice flour could be used instead of eggs. Cooking over hot water before adding eggs and seasoning, thickens the mixture. Pies made from this dried pumpkin are excellent.

### **Dried Fruits.**

Ripe peaches, pears, apples, apricots and quinces may be cut into practical pieces and dried in the sun or in an evaporator. Paring fruits and removing seeds, not only improves the quality of the dried product, but insures more rapid drying.

Figs, large sweet plums and cherries should be dried whole. The evaporators mentioned in this bulletin are especially desirable in drying these fruits. Great care must be taken when using artificial heat, if not the quality will be impaired.

Farmers' Bulletins Nos. 291 and 213 described in detail types of evaporators and give valuable information for indoor drying on a large scale.

Over-ripe, but sound, peaches, plums, and quinces may be pared, freed from seeds, etc., then mashed with a potato masher or ricer and spread in thin sheets, on boards, platters, glass, etc., and dried in the sun or in a warm oven. Store in sheets, small squares or sprinkle lightly with sugar, roll up and slice across in 1-4 inch pieces. Peach or plum "leather" was an old-fashioned name given this product.

### **Dried Preserves and Fruit Butters.**

This year we may be forced to reserve jars for canned foods and other products requiring hermetic sealing.

Preserves of all kinds and jams, marmalades and butters may be spread and dried as "fruit leathers." Remaining sirups may be bottled. Dried preserves, especially watermelon rind preserves, are excellent for plum puddings and for use as confections. Dried butters and leathers when soaked several hours are excellent for puddings and other desserts, or they may serve as confections.

Fruit juices and berry pulps (cooked berries freed from seeds) cooked quickly in shallow enamel pans until thick, sweetened and perhaps thickened with a little flour, corn starch or rice flour may be dried as peach leather. Tomato pulp may be dried in the same way.

### **Bleaching.**

After paring and cutting fruit it may be subjected to sulphur fumes to bleach it. Some persons object to using sulphur in food. The fruit may be suspended in a barrel or box which has an opening near the bottom, to admit air. A shovel or pan of burning sulphur under the fruit and a close cover over the top of the barrel bleaches it sufficiently in a short time. Commercial concerns have regular sulphur kilns for this bleaching.

### Storing.

When fruits are dry enough to be "springy" the moisture is sufficiently low to insure keeping. It is not necessary to have foods "bone dry." In fact, they are not as good when too dry. If flies and insects are kept from the drying products there will be no eggs to hatch later. Screening the outdoor evaporating frames or using screened porches protects the fruit. It is necessary to keep the dried products away from flies after storing them. Cloth sacks are very good to use until all danger of mildewing or moulding is passed, but these sacks must be kept from flies; because eggs, on the outside, hatch and the "worms" crawl through. Try slipping the cloth sacks into pouches made of tow sacking and hung on nails in the ceiling of store room. After they are dry enough, store in thick paper bags with top folded down and glued. If properly handled, dried products may be kept in perfect condition for a year. We have dried fruits and vegetables from July 1916 which show no signs of weevils or mould. They were kept in old coffee and baking powder cans.

### Winter Use.

Wash well and soak over night (longer if necessary). Cook slowly in same water in which the dried product was soaked. This prevents loss of flavor, etc. Sweeten, after fruit is tender, with sugar, honey or syrup.

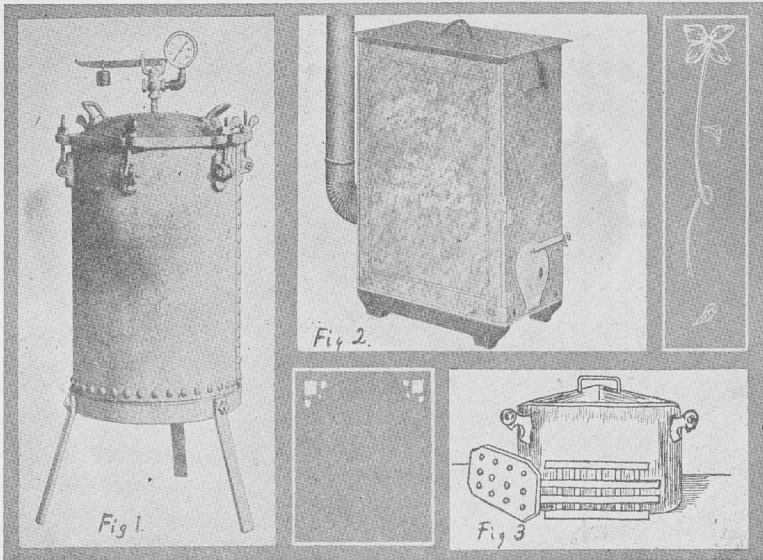
Cooked, dried fruits may be mashed or served in whole pieces or they may be made into pies, fruit rolls, puddings or whips. An endless variety of wholesome dishes may be made from them.

### Recipes.

**Dried Pear Salad.** Soak, stew and sweeten dried halves or ripe pears. When tender, drain and serve on lettuce, after you have filled the center with peanut butter. Any salad dressing suitable for fruit salad may be poured over this salad.

**Dried Peach Whip.** Press cooked, dried peaches through a sieve or potato ricer and fold into well beaten whites of eggs. The peaches must be cold and well sweetened. A little dissolved gelatine gives more "body" to this dessert. Serve with boiled custard made with the yolks of the eggs, skimmed milk and sugar.

**Dried Apple Turnover Pie.** Chop or mash dried apples, which have been washed, soaked and well cooked. Sweeten and season with cinnamon or other spice. Cook down if too moist. Make a good pastry, divide it into uniform lumps (each about the size of a large egg). Roll thin, keeping them round, and place a generous heap of the cooked apple on one half of this circle of pastry. Moisten the edge with water and fold the unfilled half over the apple. Press edges together and crimp. Prick top to allow steam to escape. Bake slowly until crust is light brown, or fry in deep fat. This old fashioned favorite may be made of any dried fruit.



# HOME CANNERS.

Figure 1, Steam Pressure Type; Figure 2, Hot Water Canner; Figure 3, Home-made Hot Water Canner.

## AVERAGE COMPOSITION OF FRESH AND DRIED FRUITS.

(From U. S. D. A. Bulletin 293.)

### FRESH FRUITS.

KIND	Water	Protein	Ether Extract	Carbohydrates	Ash	Calories Per Lb.
Apples . . . . .	84.6	0.4	0.5	14.2	0.3	290
Figs . . . . .	79.1	1.5		18.8	.6	380
Pears . . . . .	80.9	1.0	0.5	17.2	.4	163
Apricots . . . .	85.0	1.1		13.4	.5	270

### DRIED FRUITS.

KIND	Water	Protein	Ether Extract	Carbohydrates	Ash	Calories Prep'd
Apples . . . . .	26.1	1.6	2.2	68.1	2.0	1,350
Figs . . . . .	18.8	4.3	.3	74.2	2.4	1,475
Pears . . . . .	16.5	2.8	5.4	72.9	2.4	1,635
Apricots . . . .	29.4	4.7	1.0	62.5	2.4	1,290

## BRINING OR PICKLING

Meats and vegetables may be kept for long periods if covered in brine (a solution of salt and water). Stone crockery or wooden vessels and weights must be used. They must be clean. Pure salt and pure soft water are necessary for best results. A cool storage room or cellar must be used in hot weather and the brine must be closely watched for "ropiness" which should not appear. Saltpeter, which is not wholesome, is often put in brine for meats. It gives red color.

### Brining Vegetables—General Directions.

Snap beans, peppers, cauliflower, cabbage, cucumbers, green corn, okra, peas and carrots may be easily kept, especially if put down in brine (or pickle) in the late summer or fall, after hot weather is passed.

Scald crock or keg and the cover which **must** fit inside of vessel. Stone or concrete weights should also be sterilized. Wash vegetables, discarding bruised and over-ripe pieces, and pack into stone jar or keg. Boil water and dissolve salt (1 pound salt to 1 gallon water). Cool and pour the brine over vegetables, weight down and leave in cellar. Skim brine with skimmer as film rises every few days. If brine seems "ropy" it should be poured off and boiled or new brine may be put on the vegetables. Always keep vegetables well under the brine. To do so may require adding a little brine as evaporation or slight leakage lowers it. Some people add a little baking soda to the brine in hot weather.

If brined vegetables are to stand for months it is best to pour

off the brine after six weeks and repack vegetables in a clean vessel with fresh brine or pickle.

Green corn, turnips and other very juicy vegetables may be cut and packed tightly in layers as sauer kraut is packed and weighted. A ripening or curing process renders the vegetable fiber tender and develops a pleasant flavor. The liquid should rise well above the surface of the vegetables. If very thick layers of salt are put between the layers of vegetables, much water or juice is drawn out and the fibre is tough. Vegetables so packed will keep but they are not of best quality.

To freshen brined vegetables, soak in fresh water, changing several times if necessary, until excess of salt is removed before cooking.

For instructions on the brining or pickling of pork or corning of beef see U. S. D. A. Farmers' Bulletin 183.

## CANNING

The underlying principles in the canning of all foods are: sterilizing with heat (food and container) and hermetic sealing. Sugar, salt and other seasoning are added to the foods to be canned or to the liquids which, in most cases cover them, but they are not essential.

The time for sterilizing or cooking a given product depends upon the nature of the product, the size and kind of container and the method to be used.

### Methods.

Open Kettle (cooking in kettle and sealing in hot jar).

"Cold Pack", in glass and tin—Hot Water Canner.

"Cold Pack", in glass and tin—Steam Pressure Canner.

Note: "Cold Pack" means filling jars or cans with "blanched" or raw product and cooking in jar or can. Products retain their flavor, color and shape with the "cold pack" method and they are more likely to "keep."

### Containers.

Tin cans (regulation packers and sanitary).

Glass Jars . . . . .	{	Screw top
		Vacumn top
		Spring Seal top

Bottles (corks or caps).

United States Department of Agriculture, Washington, D. C., issues the following free bulletins which will be found useful in home canning:

Farmers Bulletin 521—Canning Tomatoes at Home and in Club Work.

Farmers Bulletin 426—Canning Peaches on the Farm.

Farmers Bulletin 359—Canning Vegetables in the Home.

Extension Service, A. and M. College, College Station, Texas, has a free bulletin (No. B-26) "Canning, Preserving, Pickling.

Texas University, Austin, Texas, has Bulletin No. 48—"Care and Preservation of Food in the Home."



## DEFINITIONS OF CANNING TERMS

(Adapted from U. S. D. A. Farmers' Bulletin 521.)

The following definitions will enable the beginner to know the ordinary terms used in canning:

**Scalding.**—To dip fruit in boiling hot water in order to remove the skin.

**Blanching.**—To boil quickly in water by placing the vegetables in a cloth bag, which is to be lowered entirely under water. This is done in order to eliminate acids and bitter substances from the fruit or vegetables, also to shrink or reduce bulk to insure a full pack after cooking.

**Exhausting.**—(Tin cans). To boil fruit or vegetables for a few minutes in order to drive out of the fruit and container all gases and surplus air and permit expansion before sealing the venthole. Exhausting is not practiced by all canners, but the writer considers it important, and safer with the many kinds and qualities of fruit and vegetables canned, especially when using the hot-water bath outfits at home.

Exhausting causes most fruit to shrink, but swells corn and some vegetables.

**Sterilizing.**—To boil fruit or vegetables for a certain period after tin container has been completely sealed. This is sometimes called "processing" or "boiling."

**Tinning the steel.**—To put the hot steel used for capping cans in sal ammoniac and solder, turning the steel several times until smooth and bright, and then dipping it in soldering "flux."

**Capping.**—Soldering the little solder-hemmed tops on the cans with the capping steel.

**Tipping.**—Closing or sealing the little air hole or vent in the center of the tin cap, just between the exhaust and sterilization periods.

**Processing.**—(Used for "sterilization," "cooking," or "boiling." These expressions all mean the same thing.) To completely destroy all bacteria, spores, germs, etc., in hermetically sealed cans and packages by hot water, steam, or steam pressure.

**Flux.**—Soldering flux is prepared by adding to muriatic acid as much zinc as will be dissolved, and then adding water equal in amount to the acid. This fluid is used to clean your steel and for wiping all surfaces to be soldered. By the addition of zinc to the acid, zinc chlorid is formed, and this when applied to the tins adds a coating of zinc, to which the solder will readily adhere.

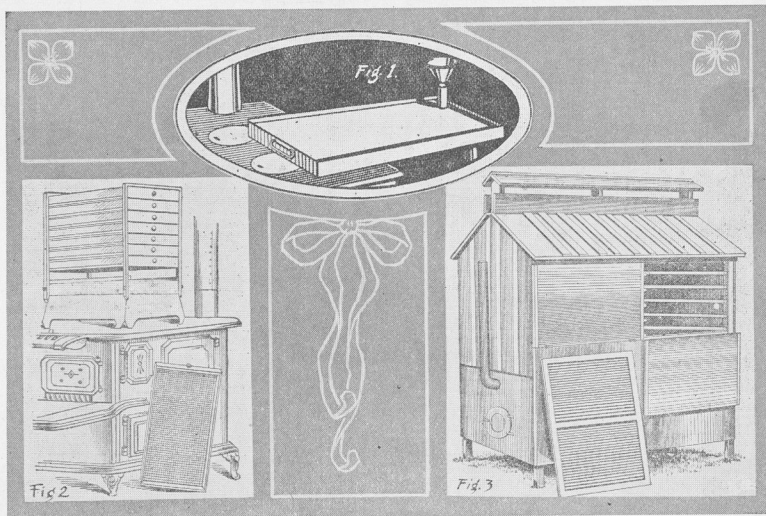
The flux should be applied carefully and none of it allowed to get inside of the can.

The solder will not adhere to tin without this flux or a similar substitute, such as rosin.

A commercial flux can be secured at a drug store.

### Hot Water Method.

Glass jars should be packed with "blanched" fruits or vegetables and, except in the case of tomatoes, liquid added to overflowing. Tops are then screwed half on and jars are placed on false bottom in canner in cool or cold water and brought slowly to the boiling point when the timing should begin. Jars can be refilled (if necessary) and rubbers



HOME EVAPORATOR.  
Figure 1, Hollow Pan Type; Figure 2, Cook Stove Type; Figure 3, Outdoor Type.

added just before sealing. (See precautions for canning tomatoes and soft fruits, etc). Tin cans are packed with food and (in most cases) liquid and capped, exhausted and tipped and lowered into boiling water in canner.

Such vegetables as corn, peas, greens, okra, beans (string and lima) and soup mixtures must be cooked or processed from 1 to 4 hours (continuous), or one hour each day for three consecutive days. This is known as intermittent or fractional processing.

Beets, carrots, and sweet potatoes should be cooked three-fourths done and skinned before canning. Sweet potatoes are packed in tin cans dry and sealed. Beets are put in enamel-lined or lacquered tin cans or in glass.

### **Steam Pressure Method.**

A set of time tables for foods processed in steam pressure canners is furnished with these canners, but care and good judgment must be exercised in cooking products which are very young and tender and those which are well matured. Glass jars are often processed in steam canning machines when care is taken not to break them. Raise and lower heat gradually and do not let cold air strike very hot jars. Glass jars can never be tightly sealed before cooking. The liquid is always low in those processed by steam pressure. Refill carefully (from tea-kettle) with boiling water, adjust rubbers and tops and seal.

### **Tomatoes.**

Tomatoes, once grown as ornamental plants and known as "love apples" are not as nutritious as some other vegetable foods, but they are very valuable for the acid and mineral matter which they contain. They are almost universally grown and are liked by nearly everybody.

Of all the vegetables canned in the home, tomatoes are the easiest to keep. They may be canned whole, in large pieces, as paste for soups, sauces, etc., or they may be made (ripe and green) into relishes. When canned with other vegetables like okra, corn, beans, etc., for soup mixtures, tomatoes "keep" or preserve the other vegetables. This year we must get as much solid tomato into our jars or cans as possible. Containers are scarce.

### **To Peel Tomatoes.**

Plunge ripe tomatoes into boiling water and leave for one minute, remove and dip into cold water, remove core and skin, chill at once if the tomato is to be eaten raw. Some prefer hand peeling but the cold bath after scalding renders them firm.

### **Canning Tomatoes in Glass.**

Select red, ripe, but not over-ripe tomatoes, peel and core as described above. Drop the tomatoes as nearly whole as possible into the jars, pack until the jar is full being careful not to break seed cells. Do not use water. Add salt (1 teaspoon to 1 quart). Put on top and screw loosely. Place the filled jars on a board or other false bottom in cold or tepid water and boil. Count from time when water begins to boil

and cook 20 minutes for pints, 30 minutes for quarts. Take out, put on rubber which has been dipped in boiling water, and screw top on airtight.

**Caution:** Do not allow cold air to strike hot jar and do not put finger or unsterilized fork or spoon inside of jar top or jar.

In case juice in the jar is low, add boiling water to fill before replacing top.

In putting up a fancy pack of tomatoes, where it is desired to have the tomatoes come out whole, they are carefully packed and juice from another lot of small or broken tomatoes is obtained by heating and putting through a sieve. The juice is then poured over the whole tomatoes.

Fine brands of tomatoes have a mixture of sugar and salt added. Mix this in proportion of one-third salt to two-thirds sugar and put 2 level teaspoonsful in each quart jar of tomatoes and 1 teaspoonful in each pint jar. This may be used for peas and corn also.

### **Canning Tomatoes in Tin.**

Be sure that canner, capping steel, and tipping copper are in good working order. Have cans and tops thoroughly washed and scalded and placed where convenient before canning is started. Scald, core, chill, and peel tomatoes as for canning in glass. A knife with a sharp narrow blade held at a slight angle will remove the whole stem and core without breaking the seed cells. All spots and green portions must be removed carefully.

**Caution:** Over-scalding or long standing after peeling is responsible for many cases of "swells."

Pack cans solidly with whole or large pieces of tomatoes. If cans are to be sold.

No. 2 cans must not contain less than 20 ozs. tomatoes.

No. 3 cans must not contain less than 33 ozs. tomatoes.

Press down contents of can so that neither fruit nor juice touches the top. Wipe top of can and place on cap. Use a small brush, feather, or a piece of cloth mop to apply the flux or soldering fluid to the grove around the cap. With a smooth hot capping steel seal the cans.

**Exhausting.**—Place the cans which have tops or small hole in the center of caps open in trays and lower into boiling water which must come well around the cans. Usually 3 minutes is enough to drive out the air. Frequently exhausting is done at 180 degrees F.

**Tipping.**—As soon as cans are exhausted remove from boiling water, wipe off top, and apply flux to edge of small hole. With hot tipping copper and wire solder, put a very small drop of solder over the hole.

**Processing.**—After cans have been exhausted and tipped, place in hot water and boil:

No. 2 cans 15 to 20 minutes.

No. 3 cans 22 to 30 minutes.

(For steam pressure canning different time is used). Count time when water first boils after cans are put in. Lower can slowly into boiling water and watch for showers of bubbles from cans. These showers show leaks and such cans must be re-soldered.

**Cooling.**—To stop the cooking, cool cans as quickly as possible. Do not stack close together while hot.

**Labeling.**—After 8 to 10 days put labels on cans with the sealed end of the can down.

### SOFT FRUITS, BLACKBERRIES AND DEWBERRIES.

Slip skins from soft peaches and remove stones, puncture soft plum skins with darning needle before putting them into jars.

Gather berries in shallow boxes or trays to prevent mashing. Wash quickly in a tub full of water—the sand settles. Put soft peaches in a wire basket and plunge into hot water for one minute or less, then into cold water. Slip off skins, remove stones.

### Canning.

Fill jars full, shaking down to get in a full pack. Set jars on a folded cloth in a biscuit pan which has about one-half inch of water. Place in oven and heat gradually until berries or peaches settle a little. While jars are in the oven, boil sugar and water (one-fourth cup sugar to one cup water, or better, juice and sugar), and pour it **very** hot into jars. Then seal and set jars in fireless cooker or a box of sawdust, or cover well with something to keep in heat for some time. If berries or fruits settle much in oven, refill from one jar by pouring. Do not try to dip them with spoon or other utensil. Do **not** touch the rims of the jars, or the inside of the tops. The rubbers, if new, may be left on in the oven. Fill jars **full** of juice, and if it is necessary to put on rubbers after jars come from the oven, overflow the hot juice to rinse off. Later boiling will sterilize this overflow juice. More sugar may be used if you desire. Some people use less. Small quantities of sugar allow the natural fruit flavor to be retained. Cooking in the jar also retains flavor, color and shape. White cotton gloves which have been boiled are useful to wear while putting on rubbers. They protect the hands and keep the jar mouth sterile.

### Jam.

Mash berries or soft fruit with potato masher; add three-fourths measure of sugar (light brown will do) and cook, stirring frequently to prevent scorching, until the jam is rich and thick. Seal in hot jars. Seedless jam is delicious, but troublesome. Spices may be added to fruit jams, or they may be flavored with orange peel. Nuts are often cooked with fruit jam.

If you have your own honey, try cooking fresh, whole berries, or uniform pieces of fruit, in strained honey, covering for a short time and then sealing up in hot jars. Tart fruits like currents are often prepared in this way.

The first efforts at canning were made when the French government offered a bounty of 12,000 francs for the discovery of a method which would better preserve foods for military and naval use. In 1810 an expert confectioner, distiller and chef won the bounty. This man was Nicholas Appert, and his discovery consisted in packing products into glass bottles, covering them with water and cooking the food (in the bottle) in a hot water bath. Corks were used to seal the bottles.



## BOTTLED JUICES

Sweetened fruit and berry juices, fruit tomato pulps and vegetable juices may be boiled down until thick and rich and poured into sterilized bottles. When filled, these bottles should be placed in cold water on a piece of wire screening or board, to prevent breaking, and boiled twenty minutes (time from boiling point). New corks which have been soaked in boiling water should be pressed into the bottles and held down by standing bottles upside down or by placing a heavy board on several bottles. When bottles are cold, trim corks, if necessary, and cover with sealing wax or paraffin. Store in a dark place or wrap bottles in brown paper to prevent fading of juice.

Verjuice, an old-time condiment, was the extracted and seasoned juice of green apples, crab apples or any unripe fruit, bottled for use on meats, fish or game. Lemons were once scarce and may be so again.

Shrub, made from berry juices, sweetened and flavored with a small quantity of cider vinegar, was bottled and used by our grandmothers as we serve grape juice today.

Bottles with metal caps may be bought for home use. Hand machines for sealing them may be had at moderate expense.

Note: Vegetable juice may be seasoned with salt and pepper and various herbs.

U. S. Farmers' Bulletin No. 644 gives valuable advice on home-made grape juice. Texas wild grapes make good bottled juice. Any bottle which can be cleaned, sterilized and fitted with a new cork may be used to bottle juices for home use.

### Uses.

Fruit and berry juices may be diluted with cold water or cracked ice and used as a beverage. They may be stiffened with gelatine or corn starch and served as a desert with whipped cream or boiled custard. Fruit and berry pulps may be used as pudding sauces or in making sherberts and fruit punches. Served at breakfast as orange juice is served they are very good.

## CANNED GREENS

Turnip greens, mustard, spinach, or any cultivated or wild greens may be canned for winter use.

Use only fresh tender, greens; wash and blanch (heat in small amounts of water until they shrink), usually 20 minutes is sufficient to reduce them in bulk. Steaming them is better. A wire basket set in a large kettle which has just enough water to furnish steam, makes a good steamer, if covered. Small turnips may be blanched and canned with turnip greens.

Season greens with salt ( 1 teaspoon to each quart), pepper, and fat meat, or bacon drippings, if liked.

Pack into jars or tin cans and process (or cook).

**In Steam Pressure Canning Machines**  
**Process Spinach**

No. 2 tin cans, 20 minutes at 10 pounds pressure.

No. 3 tin cans, 25 minutes at 10 pounds pressure.

One-quart glass jars, same as No. 3 tin cans.

**In Steam Pressure Canner**  
**Process Mustard and Turnip Greens.**

No. 2 tin cans 45 minutes at 8 pounds pressure.

No. 3 tin cans 55 minutes at 8 pounds pressure.

**Spinach and Other Greens in Hot Water Bath.**

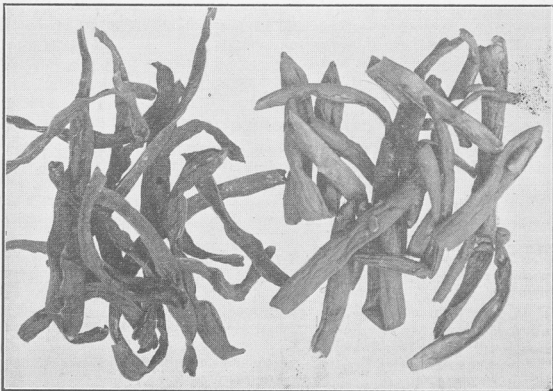
One hour each day for three days, or three to five hours continuous cooking.

Green snap beans and okra should be "blanched" until soft enough to bend, then plunged into cold water and canned as turnip greens.

## **CURING FOOD**

Sweet potatoes are cured in special houses built for the purpose. Onions, Irish potatoes, garlies, pumpkins, dried beans and peas, also cushaw, should be matured in field or garden, then stored in cool, dry shelves, racks or floors.

As good cheese (cheddar process) as has ever been seen in the state was made and cured in the Panhandle of Texas. Many farmers in the state cure their own meat every year.



**DRIED GREEN BEANS.**  
Left: Dried Beans. Right: Same After Soaking.

### Sauer Kraut.

Sauer kraut is not only popular, but it is a very wholesome food when properly made, cured, and stored.

Scald crockery jar, cement tank, wooden keg or barrel to be used for curing vat.

Shred firm, hard cabbage head with kraut cutter, or long knife. Do not chop. Remove outside leaves and split cores.

Place shredded cabbage in layers from two to three inches deep, sprinkle lightly with salt, about two and one-half pounds best dairy salt to each 100 pounds of cabbage. Each layer should be well packed.

Scald stone or wooden cover, which is fitted to inside of vessel, and place on cabbage. Weight down with heavy weight of rocks or concrete block. Do not use metal. Liquid will rise above cabbage. Leave to ripen until proper flavor develops. This takes from ten days to two weeks in warm weather; longer in cool weather.

As soon as "cured" store in cool place, or can. Pack into No. 3, or No. 10 tin cans, or in glass jars and cook (in jar) three to five hours, depending on size of jars, if hot water bath is used. A steam pressure canner is better for this product. By this method, process (or cook).

No. 3 cans 40 minutes at 5 pounds pressure.

No. 10 cans 60 minutes at 5 pounds pressure.

Note: Turnips are sometimes mixed with the cabbage.

## HOME VINEGAR MAKING

It has not been many years since vinegar was as much a home-made product as bread was in those same times.

Everybody in Texas who produces fruits, or who can buy them at moderate prices, will certainly put them up as first, second or lower grade products. Canning, preserving and drying will be employed by frugal housewives to use every "scrap" of food.

Parings, trimmings and cores may be used by those who feel like using the necessary sugar, in jelly making; but excellent vinegar may be had from these waste materials.

### GENERAL DIRECTIONS.

Clean and scald a wooden, stone or glass vessel which has a wide mouth. Vinegar must have air. Into this, place raw fruit juice, or parings, etc., free from decayed spots. Pour on them enough pure, soft water to almost cover them. With a pestle or similar instrument mash or bruise them until the fruit juices are pressed out. Apple cider makes the best vinegar.

Add molasses, sugar or honey or a mixture of them. Some use washings from honey and molasses cans. Leave standing in a temperature from 70 to 90 degrees F. and allow to ferment. A piece of cloth should be tied securely over the opening to keep out gnats and to allow plenty of air to enter. A small piece of yeast cake added to the liquid will hasten fermentation.

Agarita berries, green grapes, and even yellow tomatoes make excellent vinegar.

For more detailed information on vinegar making see Farmers' Bulletin No. 233, on Vinegar Making.

## SUBSTITUTE FOODS FOR WHEAT AND MEAT

To meet a very probable shortage of wheat flour, food experts are turning to other grains and vegetable products for flours and meals, from which nourishing, palatable breads may be made.

Corn has long been a staple in the South, but corn meal is lacking in a certain "body building" substance found in wheat. This substance is known as "protein" and is found in milk and cheese, in eggs, nuts and dried peas and beans, also in lean of meat. Hulled corn or lye hominy, made with home-made lye and cooked thoroughly in a fireless cooker, should be made by every family on a farm next winter. Potash has gone up in price since the war began and it is now thought that commercial lye and soap will be very scarce.

Flour from sorghum grains, (feterita, milo maize, kafir corn, Shallu or Egyptian wheat) and flour made from rice are being used for quick breads, cakes and for yeast breads when some wheat flour is added.

Soy beans are ground in hand mills and made into nourishing, delicious breads and cakes. Soy beans take the place of meat in the diet as well as serving as a bread.

Other dried "legumes" which replace meat in the diet are navy beans, lima beans, frijoles, field peas (all varieties), garden peas, lentils and peanuts (not a true nut).

With plenty of these foods, a good cow and some chickens, a family may have a varied and nourishing diet if every means and transportation were suddenly stopped.

Note: Recipes and directions for dishes made of meat and wheat substitutes will be offered later.

## SUMMARY OF METHODS OF SAVING FOODS

Food saved, like the proverbial penny, is food made. Tons of foods are produced annually only to go to waste. The time has come to revive the almost forgotten arts of saving many perishable products on Texas farms. It seems strange that present conditions are forcing us back to homely methods used by our grandmothers in the days before food factories were known.

The following list suggests a few Texas fruits and vegetables and their possibilities for home preservations:

TOMATOES—can, paste, soup mixtures, relishes.

OKRA—dry, can, soup mixtures.

GREEN BEANS—brine, can, soup mixtures, relishes.

ENGLISH PEAS—dry, soup mixtures, brine.

FIELD PEAS—mature, can, (green) soup mixtures, brine.

GREEN CORN—dry, can, soup mixtures, relishes, brine.

SPINACH—can.

SQUASH—can.

CABBAGE—kraut, can, soup mixture, relishes, brine.

GARLIC and ONIONS—cure, soup mixture, relishes.

PUMPKINS—mature, dry, can.

CARROTS—bank, can, soup mixtures, relishes, brine.

SWEET POTATOES—cure, can.  
 IRISH POTATOES—cure.  
 TURNIPS—bank, brine as kraut.  
 RUTABAGA—bank.  
 TURNIP GREENS—can.  
 MUSTARD GREENS—can.  
 BUTTER BEAS—mature, can (green), brine.  
 NAVY AND OTHER DRY BEANS—mature.  
 CAULIFLOWER—can, soup mixture, relishes, brine.  
 BEETS—can, relishes.  
 CUSHAW—mature, can.  
 APPLIES—dry, can, bottled juice, preserve, marmalade, jelly,  
     vinegar.  
 PEACHES—dry, can, bottled juice, preserve, marmalade, jelly,  
     vinegar.  
 PEARS—can dry, (ripe), preserve and marmalade, vinegar.  
 PLUMS—can, preserves, marmalades and jelly.  
 GRAPES—bottled juice, can jelly, preserves, marmalade.  
 FIGS—dry, preserves, marmalade.  
 BERRIES—can, bottled juice, jelly, preserves and jam.  
 QUINCES—preserve and marmalade, jelly.  
 CHERRIES—can, preserve.  
 APRICOTS—dry, can, preserve and marmalade.  
 MELON RINDS—preserve.

#### WINTER GARDENS AND HOT BEDS.

Collards	Parsley
Green Onions	Radishes
Leeks	Late Cabbage
Spinach (South, Tex.)	Turnips
Lettuce	Salsify
	Parsnips

#### FARMERS' BULLETINS ON FOOD CONSERVATION SUBJECTS.

United States Department of Agriculture.  
 Washington, D. C.

(These bulletins may be had by writing your congressman).

Farmers' Bulletin No. 121—Beans, Peas, and other Legumes as Food.  
 Farmers' Bulletin No. 128—Eggs and their uses as Food, 5c.  
 Farmers' Bulletin No. 142—Principles of Nutrition and Nutritive Value  
     of Food.  
 Farmers' Bulletin No. 169—The Food Value of Beans—5c. •  
 Farmers' Bulletin No. 182—Poultry as Food.  
 Farmers' Bulletin No. 183—Meat on the Farm—Butchering, Curing and  
     Keeping.  
 Farmers' Bulletin No. 203—Canned Fruits, Preserves and Jellies.  
 Farmers' Bulletin No. 291—Evaporation of Apples.  
 Farmers' Bulletin No. 293—Use of Fruit as Food.  
 Farmers' Bulletin No. 295—Potatoes and Other Root Crops as Food.  
 Farmers' Bulletin No. 298—Food Value of Corn and Corn Products.



Farmers' Bulletin No. 332—Nuts and Their Uses as Food—5c.  
Farmers' Bulletin No. 342—Cooking Beans and Other Vegetables—5c.  
Farmers' Bulletin No. 359—Canning Vegetables in the Home.  
Farmers' Bulletin No. 363—The Use of Milk as Foods.  
Farmers' Bulletin No. 375—Care of Food in the Home.  
Farmers' Bulletin No. 388—Jelly and Jelly-making—5c.  
Farmers' Bulletin No. 391—Economical Use of Meat in the Home.  
Farmers' Bulletin No. 426—Canning Peaches on the Farm.  
Farmers' Bulletin No. 486—The Utilization of Dairy By-products as Food.  
Farmers' Bulletin No. 487—Cheese and Its Economical Uses in the Diet.  
Farmers' Bulletin No. 517—Uses of the Sweet Potato—5c.  
Farmers' Bulletin No. 521—Canning Tomatoes at Home and in Club Work.  
Farmers' Bulletin No. 526—Mutton and Its Value in the Diet.  
Farmers' Bulletin No. 559—Use of Corn, Kafir, and Cowpeas in the Home.  
Farmers' Bulletin No. 565—Corn Meal as Food and Ways of Using It.  
Farmers' Bulletin No. 644—Home Manufacture and Use of Unfermented

Grape Juice.

Farmers' Bulletin No. 653—Honey and Its Uses in the Home.  
Farmers' Bulletin No. 685—The Native Persimmon.  
Farmers' Bulletin No. 233—Vinegar Making.  
Farmers' Bulletin No. 276—Honey Vinegar.  
Farmers' Bulletin No. 503—Comb Honey.  
Farmers' Bulletin No. 758—Muscadine Grape Syrup.  
Farmers' Bulletin No. 807—Bread and Bread Making in the Home.  
Farmers' Bulletin No. 808—How to Select Food.